NAVIGATION STUDY FOR
JACKSONVILLE HARBOR, FLORIDA

APPENDIX N
COST ESTIMATES AND COST RISK ANALYSIS

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NAVIGATION STUDY FOR JACKSONVILLE HARBOR, FLORIDA

N. COST ESTIMATES AND RISK ANALYSIS

N1. GENERAL INFORMATION

Corps of Engineers cost estimates for planning purposes are prepared in accordance with the following guidance:

- Engineer Technical Letter (ETL) 1110-2-573, Construction Cost Estimating Guide for Civil Works, 30 September 2008
- Engineer Regulation (ER) 1110-1-1300, Cost Engineering Policy and General Requirements, 26 March 1993
- ER 1110-2-1302, Civil Works Cost Engineering, 15 September 2008
- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 August 1999
- ER 1105-2-100, Planning Guidance Notebook, 22 April 2000, as amended
- Engineer Manual (EM) 1110-2-1304 (Tables Revised 31 March 2012), Civil Works Construction Cost Index System, 31 March 2000
- CECW-CP Memorandum for Distribution, Subject: Initiatives to Improve the Accuracy of Total Project Costs in Civil Works Feasibility Studies Requiring Congressional Authorization, 19 September 2007
- CECW-CE Memorandum for Distribution, Subject: Application of Cost Risk Analysis Methods to Develop Contingencies for Civil Works Total Project Costs, 3 July 2007
- Cost and Schedule Risk Analysis Process, March 2008

The goal of the cost estimates for the Jacksonville Harbor, Florida General Reevaluation Report II Feasibility Study is to present a Total Project Cost (Construction and Non-Construction costs) for the National Economic Development (NED) plan and the Locally Preferred Plan (LPP) at the current price level to be used for project justification/authorization. In addition, the costing efforts are intended to produce a final product (cost estimate) that is reliable and accurate, and that supports the definition of the Government's and the Non-Federal sponsor's obligations.

The cost estimating effort for the study also yielded a series of alternative plan formulation cost estimates for decision making. The cost estimates supporting the NED plan and the LPP is prepared in MCACES/MII format to the CWWBS sub-feature level. This estimate is supported by the preferred labor, equipment, materials and crew/production breakdown. An Abbreviated Risk Analysis (ARA) is included that addresses project uncertainties and sets contingencies for each plan's cost items.

N.1.1 Recommended Alternative Plans

The final NED plan and LPP resulted directly from the plan formulation described above. The Economics Appendix fully describes the plan selection. The scope of work for the NED plan and LPP is found in the Engineering Appendix. The MCACES/MII cost estimates are based on that scope and are formatted in the CWWBS. The notes provided in the body of the estimate detail the estimate parameters and assumptions. These include pricing at the Fiscal Year 2013 price level (1 October 2012-30 September 2013).

The construction costs fall under the following feature codes:

- 06 Fish and Wildlife Facilities
- 10 Breakwaters and Seawalls
- 12 Navigation Ports and Harbors

The non-construction costs fall under the following feature codes:

- 01 Lands and Damages
- 02 Relocations
- 30 Planning, Engineering and Design
- 31 Construction Management

N.1.2 Construction Cost

Construction costs were developed in MCACES/MII and include all major project components categorized under the appropriate CWWBS to the sub-feature level. The Total Project Costs on each plan contain contingencies that were determined as a result of the risk analysis. Additional information follows on the risk analysis.

N.1.3 Non-construction Cost

Non-construction costs typically include Lands and Damages (Real Estate), Planning Engineering & Design (PED) and Construction Management Costs (Supervision & Administration, S&A). These costs were provided by the PDT either as a lump sum cost or as a percentage of the total Construction Contract Cost. Lands and Damages are provided by Real Estate and are best described in the Real Estate Appendix. PED costs for the preparation of contract plans and specifications (P&S) were provided by the project manager as a percentage of the total construction contract cost. Construction Management costs are for the supervision and administration of a contract and include Project Management and Contract Admin costs. These costs were provided by the project manager and are included as a percentage of the total construction contract cost.

In addition to the typical non-construction costs, this project also includes a Relocations cost for the relocation of aids to navigation, as well as non-construction Fish and Wildlife Facilities costs for the establishment of nutrient reduction measures, eco-restoration areas, and post construction monitoring.

The main report details both cost allocation and cost apportionment for the Federal Government and the Non-Federal Sponsor. Also included in the main report are the Non-Federal Sponsor's obligations (items of local cooperation).

N.1.4 Plan Formulation Cost Estimates

For the plan formulation cost estimates, unit prices for dredging related work were developed in the Corps of Engineers Dredge Estimating Program (CEDEP) and then entered into MCACES/MII. Unit prices for the remaining major or variable construction elements were developed in MCACES/MII based on input from the PDT. Design details, information and assumptions are provided in the Engineering Appendix. Plan formulation alternatives and cost estimates did not include advanced maintenance or any associated advanced maintenance features.

Refer to Economics Section in the main report for final plan formulation cost tables.

N.1.5 Construction Schedule

A construction schedule was prepared utilizing input from the PDT and reflects all project construction components. The schedule considers not only durations of individual components of construction, but also the timing of construction contracts based on funding. The construction schedule was combined with the project schedule to create an overall schedule that was used for the generation of the Total Project Cost. The construction schedule will change as the project moves through the various project lifecycle phases. The overall project schedules are provided in this report.

N2. PLAN FORMULATION COST ESTIMATES

Refer to the Economics Section in the Main Report.

N3. NED and LPP COST ESTIMATES

Refer to MII Printouts in this report.

Jacksonville Harbor GRR2

Title Page

Deepening of the Existing Authorized Project. TSP = 45' - LPP = 47'

Estimated by	CESAJ-EN-TC
Designed by	CESAJ-EN-DW
Prepared by	Randy Murray, CESAJ-EN-TC
Preparation Date	3/4/2013
Effective Date of Pricing	10/1/2012
Estimated Construction Time	1,816 Days

Designed by
CESAJ-EN-DW

Estimated by
CESAJ-EN-TC

Prepared by
Randy Murray, CESAJ-EN-TC

Design Document Draft EN Appendix and Supporting Plates
Document Date 3/4/2013

District Jacksonville District
Contact Randy Murray, 904-232-1876

Budget Year 2013
UOM System Original

Direct Costs
LaborCost
EQCost
MatlCost
SubBidCost
CEDEP
OTHER
MISC

Timeline/Currency
Preparation Date 3/4/2013
Escalation Date 10/1/2012
Eff. Pricing Date 10/1/2012
Estimated Duration 1816 Day(s)

Currency US dollars
Exchange Rate 1.000000

Costbook CB10EB: MII English Cost Book 2010

Labor LFL2010: Labor_Florida_2010B_4.1

Labor Rates
LaborCost1
LaborCost2
LaborCost3
LaborCost4

Equipment EP11R03: MII Equipment 2011 Region 03
Note: Gas and On-Road Diesel fuel prices were quotes obtained from the AAA Fuel Gauge Report website on3/4/13.

03 SOUTHEAST

Sales Tax	8.35
Working Hours per Year	1,530
Labor Adjustment Factor	0.86
Cost of Money	1.38
Cost of Money Discount	25.00
Tire Recap Cost Factor	1.50
Tire Recap Wear Factor	1.80
Tire Repair Factor	0.15
Equipment Cost Factor	1.00
Standby Depreciation Factor	0.50

Fuel

Electricity	0.087
Gas	3.817
Diesel Off-Road	3.605
Diesel On-Road	4.175

Shipping Rates

Over 0 CWT	15.58
Over 240 CWT	14.19
Over 300 CWT	12.14
Over 400 CWT	10.20
Over 500 CWT	6.13
Over 700 CWT	6.13
Over 800 CWT	9.25

Currency in US dollars

Date	Author	Note

3/5/2013 Randy Murray

PLANNING LEVEL ESTIMATE - NED and LPP

Project Name:
General Reevaluation Report 2 (GRR2), Jacksonville Harbor
NED & LPP Estimates (Including Federal & Non-federal Costs)
Duval County, Florida

Scope of Work:

Project Description: The project work consists of construction dredging, bulkhead improvements and mitigation costs for project depths for 45 feet (TSP) and 47 feet (LPP). The project depth costs include a one foot required and one foot allowable overdepth. Advanced maintenance areas are also included based on preliminary shoaling analysis information that will add two feet of additional depth.

Documents Used as the Basis for this Estimate:

This estimate is based on dredge volumes, surface areas, and hauling distances as provided by the ETL, Steve Conger. Blasting areas and rock quantities were provided by EN-GG, Steve Myers and Eve Huggins. Quantities for dredging and blasting were verified by EN-TC.

Volatile Cost Items:

To address the concern that exists regarding the required mitigation PD-E, Paul Stodola and Mike Hollingsworth, have provided mitigation and monitoring cost reports for the 44 foot and 50 foot project depths, based on currently identified environmental impacts. These costs are included in the estimates and applied based upon incremental depth cost adjustment prorated between the 44 and 50 foot project depths.

Construction Schedule:

Construction durations are provided in the MS Project schedules for the NED & LPP depths based on the PDT identified tentative procurement plan.

Escalation:

None applied since interest during construction (IDC) cost will be included in the economics calculations to determine the benefit cost ratio (BCR) for the final

Date Author Note

incremental depth alternatives.

General Assumptions:

1. FOOH: In accordance with Rule of Thumb guidelines and in-house experience field office overhead is set at 10% for the Prime Contractor.
2. **HOOH:** In accordance with Rule of Thumb guidelines and in-house experience home office overhead is set at 6.5% for the Prime Contractor.
3. **Profit:** Prime Contractor profit set at 10%.
4. **Bond:** Based on Rule of Thumb guidelines and in-house experience Bond Cost is set at 1% for the Prime Contractor and Blasting sub.
5. **Price Level:** Costs are calculated at FY13 cost level - October 1, 2012.
6. **Productivity/Overtime Usage:** Productivity is based on similar project production history which makes allowance for weather delays.
7. C**ontingency:** Contingency to be set in accordance with Abbreviated Risk Analysis.

All dredging costs were computed using the Cost Engineering Dredge Estimating Program (CEDEP) in accordance with ER-1110-2-1302 and ETL 1110-2-573.

Dredge production and operating efficiencies were based on past contract production records for similar projects.

Drilling and Blasting costs were computed using the Excel Spreadsheet cost estimate program originally developed by SAW with updates made by SAJ based on input from Contract Drilling & Blasting LLC.

Other work to be sub-contracted includes the Environmental Monitoring, and Turbidity Monitoring.

Work Plan:

The estimate is based on dredging by clamshell and hydraulic excavator dredges with disposal in the ODMDS located approximately 4.2 miles offshore.

Site Access:

Site access is typical for this type of dredging work. Equipment and labor availability for this project is similar to dredging projects performed by the District in the past.

Date	Author	Note

Environmental Concerns During Construction:

Specific environmental impacts and appropriate mitigation will be more precisely identified as the selected plan is identified. Turbidity monitoring and Endangered Species Observer costs are currently included in the estimate.

Effective Dates for Labor, Equipment and Material Pricing:

Costs are calculated at FY13 cost level - October 1, 2012.

Supporting Databases:

Current CEDEP Program Files.

Direct Cost Markups	Category	Method
Productivity	Productivity	Productivity
Overtime	Overtime	Overtime

	Days/Week	Hours/Shift	Shifts/Day	1st Shift	2nd Shift	3rd Shift
Standard	*5.00*	*8.00*	*1.00*	*8.00*	*0.00*	*0.00*
Actual	*5.00*	*8.00*	*1.00*	*8.00*	*0.00*	*0.00*

Day	OT Factor	Working	OT Percent	FCCM Percent
Monday	*1.50*	*Yes*	*0.00*	*0.00*
Tuesday	*1.50*	*Yes*		
Wednesday	*1.50*	*Yes*		
Thursday	*1.50*	*Yes*		
Friday	*1.50*	*Yes*		
Saturday	*1.50*	*No*		
Sunday	*2.00*	*No*		

Sales Tax	TaxAdj	Running % on Selected Costs
MatlCost		

Contractor Markups	Category	Method
JOOH	JOOH	Direct %
HOOH	HOOH	Running %
Profit	Profit	Running %
Excise Tax	Excise	Running %
Bond	Bond	Direct %

Owner Markups	Category	Method
SIOH	SIOH	Running %
Contingency	Contingency	Running %
IncMitCont	Contingency	Running %

Currency in US dollars

Description	Quantity	UOM	ContractCost	Escalation	Contingency	ProjectCost
Project Cost Summary Report			**987,958,382**	**0**	**282,857,803**	**1,270,816,186**
Jacksonville Harbor GRR2 - NED (45' Project Depth)	**1.00**	**LS**	**418,652,815**	**0**	**119,335,089**	**537,987,904**
NED - Segment 1 - 45' Project Depth	**1.00**	**LS**	**418,652,815**	**0**	**119,335,089**	**537,987,904**
Construction Costs	**1.00**	**LS**	**409,607,545**	**0**	**117,154,498**	**526,762,043**
06 Fish and Wildlife Facilities	**1.00**	**LS**	**56,461,679**	**0**	**17,985,134**	**74,446,813**
0603 Wildlife Facilities & Sanctuary	**1.00**	**LS**	**56,461,679**	**0**	**17,985,134**	**74,446,813**
10 Breakwaters and Seawalls	**1.00**	**LS**	**1,080,000**	**0**	**148,596**	**1,228,596**
1000 Breakwaters & Seawalls	**1.00**	**LS**	**1,080,000**	**0**	**148,596**	**1,228,596**
12 Navigation Ports & Harbors	**1.00**	**LS**	**352,065,866**	**0**	**99,020,768**	**451,086,634**
1202 Harbors	**1.00**	**LS**	**352,065,866**	**0**	**99,020,768**	**451,086,634**
Non-Construction Costs	**1.00**	**LS**	**9,045,270**	**0**	**2,180,591**	**11,225,861**
01 Lands and Damages	**1.00**	**LS**	**100,000**	**0**	**25,000**	**125,000**
0123 Construction Contract Documents	**1.00**	**LS**	**100,000**	**0**	**25,000**	**125,000**
02 Relocations	**1.00**	**LS**	**1,000,000**	**0**	**131,684**	**1,131,684**
0203 Cemetery, Utilities, & Structure	**1.00**	**LS**	**1,000,000**	**0**	**131,684**	**1,131,684**
30 Planning, Engineering and Design	**1.00**	**LS**	**3,972,635**	**0**	**1,243,220**	**5,215,855**
3023 Construction Contract Documents	**1.00**	**LS**	**3,972,635**	**0**	**1,243,220**	**5,215,855**
31 Construction Management	**1.00**	**LS**	**3,972,635**	**0**	**780,686**	**4,753,321**
3123 Construction Contracts	**1.00**	**LS**	**3,972,635**	**0**	**780,686**	**4,753,321**
Jacksonville Harbor GRR2 - LPP (47' Project Depth)	**1.00**	**LS**	**569,305,567**	**0**	**163,522,714**	**732,828,282**
LPP - Segment 1 - 47' Project Depth	**1.00**	**LS**	**569,305,567**	**0**	**163,522,714**	**732,828,282**
Construction Costs	**1.00**	**LS**	**557,392,257**	**0**	**160,611,864**	**718,004,122**
06 Fish and Wildlife Facilities	**1.00**	**LS**	**56,461,679**	**0**	**23,620,518**	**80,082,197**
0603 Wildlife Facilities & Sanctuary	**1.00**	**LS**	**56,461,679**	**0**	**23,620,518**	**80,082,197**
10 Breakwaters and Seawalls	**1.00**	**LS**	**77,919,000**	**0**	**17,847,347**	**95,766,347**
1000 Breakwaters & Seawalls	**1.00**	**LS**	**77,919,000**	**0**	**17,847,347**	**95,766,347**
12 Navigation Ports & Harbors	**1.00**	**LS**	**423,011,578**	**0**	**119,144,000**	**542,155,578**
1202 Harbors	**1.00**	**LS**	**423,011,578**	**0**	**119,144,000**	**542,155,578**
Non-Construction Costs	**1.00**	**LS**	**11,913,310**	**0**	**2,910,850**	**14,824,160**
01 Lands and Damages	**1.00**	**LS**	**100,000**	**0**	**25,000**	**125,000**
0123 Construction Contract Documents	**1.00**	**LS**	**100,000**	**0**	**25,000**	**125,000**
02 Relocations	**1.00**	**LS**	**1,000,000**	**0**	**131,700**	**1,131,700**
0203 Cemetery, Utilities, & Structure	**1.00**	**LS**	**1,000,000**	**0**	**131,700**	**1,131,700**
30 Planning, Engineering and Design	**1.00**	**LS**	**5,406,655**	**0**	**1,691,742**	**7,098,397**
3023 Construction Contract Documents	**1.00**	**LS**	**5,406,655**	**0**	**1,691,742**	**7,098,397**
31 Construction Management	**1.00**	**LS**	**5,406,655**	**0**	**1,062,408**	**6,469,063**
3123 Construction Contracts	**1.00**	**LS**	**5,406,655**	**0**	**1,062,408**	**6,469,063**

Currency in US dollars

Description	Quantity	UOM	Contractor	DirectCost	SubCMU	CostToPrime	PrimeCMU	ContractCost
Contract Cost Summary Report				958,866,123	12,895,840	971,761,964	16,196,418	987,958,382
Jacksonville Harbor GRR2 - NED (45' Project Depth)	1.00	LS		406,308,801	5,471,780	411,780,581	6,872,234	418,652,815
NED - Segment 1 - 45' Project Depth	1.00	LS		406,308,801	5,471,780	411,780,581	6,872,234	418,652,815
Construction Costs	1.00	LS		397,263,531	5,471,780	402,735,311	6,872,234	409,607,545
06 Fish and Wildlife Facilities	1.00	LS	Government: Non-Construction	56,461,679	0	56,461,679	0	56,461,679
0603 Wildlife Facilities & Sanctuary	1.00	LS	Government: Non-Construction	56,461,679	0	56,461,679	0	56,461,679
10 Breakwaters and Seawalls	1.00	LS	Government: Non-Construction	1,080,000	0	1,080,000	0	1,080,000
1000 Breakwaters & Seawalls	1.00	LS	Government: Non-Construction	1,080,000	0	1,080,000	0	1,080,000
12 Navigation Ports & Harbors	1.00	LS		339,721,852	5,471,780	345,193,632	6,872,234	352,065,866
1202 Harbors	1.00	LS		339,721,852	5,471,780	345,193,632	6,872,234	352,065,866
Non-Construction Costs	1.00	LS		9,045,270	0	9,045,270	0	9,045,270
01 Lands and Damages	1.00	LS	Government: Non-Construction	100,000	0	100,000	0	100,000
0123 Construction Contract Documents	1.00	LS	Government: Non-Construction	100,000	0	100,000	0	100,000
02 Relocations	1.00	LS	Government: Non-Construction	1,000,000	0	1,000,000	0	1,000,000
0203 Cemetery, Utilities, & Structure	1.00	LS	Government: Non-Construction	1,000,000	0	1,000,000	0	1,000,000
30 Planning, Engineering and Design	1.00	LS	Government: Non-Construction	3,972,635	0	3,972,635	0	3,972,635
3023 Construction Contract Documents	1.00	LS	Government: Non-Construction	3,972,635	0	3,972,635	0	3,972,635
31 Construction Management	1.00	LS	Government: Non-Construction	3,972,635	0	3,972,635	0	3,972,635
3123 Construction Contracts	1.00	LS	Government: Non-Construction	3,972,635	0	3,972,635	0	3,972,635
Jacksonville Harbor GRR2 - LPP (47' Project Depth)	1.00	LS		552,557,323	7,424,061	559,981,383	9,324,184	569,305,567
LPP - Segment 1 - 47' Project Depth	1.00	LS		552,557,323	7,424,061	559,981,383	9,324,184	569,305,567
Construction Costs	1.00	LS		540,644,013	7,424,061	548,068,073	9,324,184	557,392,257
06 Fish and Wildlife Facilities	1.00	LS	Government: Non-Construction	56,461,679	0	56,461,679	0	56,461,679
0603 Wildlife Facilities & Sanctuary	1.00	LS	Government: Non-Construction	56,461,679	0	56,461,679	0	56,461,679
10 Breakwaters and Seawalls	1.00	LS	Government: Non-Construction	77,919,000	0	77,919,000	0	77,919,000

Currency in US dollars

Description	Quantity	UOM	Contractor	DirectCost	SubCMU	CostToPrime	PrimeCMU	ContractCost
1000 Breakwaters & Seawalls	**1.00**	**LS**	**Government: Non-Construction**	**77,919,000**	**0**	**77,919,000**	**0**	**77,919,000**
12 Navigation Ports & Harbors	**1.00**	**LS**		**406,263,334**	**7,424,061**	**413,687,394**	**9,324,184**	**423,011,578**
1202 Harbors	**1.00**	**LS**		**406,263,334**	**7,424,061**	**413,687,394**	**9,324,184**	**423,011,578**
Non-Construction Costs	**1.00**	**LS**		**11,913,310**	**0**	**11,913,310**	**0**	**11,913,310**
01 Lands and Damages	**1.00**	**LS**	**Government: Non-Construction**	**100,000**	**0**	**100,000**	**0**	**100,000**
0123 Construction Contract Documents	**1.00**	**LS**	**Government: Non-Construction**	**100,000**	**0**	**100,000**	**0**	**100,000**
02 Relocations	**1.00**	**LS**	**Government: Non-Construction**	**1,000,000**	**0**	**1,000,000**	**0**	**1,000,000**
0203 Cemetery, Utilities, & Structure	**1.00**	**LS**	**Government: Non-Construction**	**1,000,000**	**0**	**1,000,000**	**0**	**1,000,000**
30 Planning, Engineering and Design	**1.00**	**LS**	**Government: Non-Construction**	**5,406,655**	**0**	**5,406,655**	**0**	**5,406,655**
3023 Construction Contract Documents	**1.00**	**LS**	**Government: Non-Construction**	**5,406,655**	**0**	**5,406,655**	**0**	**5,406,655**
31 Construction Management	**1.00**	**LS**	**Government: Non-Construction**	**5,406,655**	**0**	**5,406,655**	**0**	**5,406,655**
3123 Construction Contracts	**1.00**	**LS**	**Government: Non-Construction**	**5,406,655**	**0**	**5,406,655**	**0**	**5,406,655**

Currency in US dollars

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost
Project Direct Costs Report				**0**	**1,283,648**	**0**	**0**	**957,582,476**	**958,866,123**
Jacksonville Harbor GRR2 - NED (45' Project Depth)	**1.00**	**LS**		**0**	**659,985**	**0**	**0**	**405,648,816**	**406,308,801**
NED - Segment 1 - 45' Project Depth	**1.00**	**LS**		**0**	**659,985**	**0**	**0**	**405,648,816**	**406,308,801**
Construction Costs	**1.00**	**LS**		**0**	**659,985**	**0**	**0**	**396,603,546**	**397,263,531**
06 Fish and Wildlife Facilities	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**56,461,679**	**56,461,679**
0603 Wildlife Facilities & Sanctuary	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**56,461,679**	**56,461,679**
USR Monitoring	1.00	LS	Government: Non-Construction	0	0	0	0	22,205,729	22,205,729
10 Breakwaters and Seawalls	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**1,080,000**	**1,080,000**
1000 Breakwaters & Seawalls	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**1,080,000**	**1,080,000**
USR PNMX	1.00	LS	Government: Non-Construction	0	0	0	0	0	0
12 Navigation Ports & Harbors	**1.00**	**LS**		**0**	**659,985**	**0**	**0**	**339,061,867**	**339,721,852**
1202 Harbors	**1.00**	**LS**		**0**	**659,985**	**0**	**0**	**339,061,867**	**339,721,852**
				0.00	*0.00*	*0.00*	*0.00*		*13,000.00*
USR Infrared Camera	1.00	EA	Prime Dredging Contractor- Contract 1	0	0	0	0	13,000	13,000
				0.00	*0.00*	*0.00*	*0.00*		*3,200.00*
USR Night Vision Goggles	1.00	EA	Prime Dredging Contractor- Contract 1	0	0	0	0	3,200	3,200
Non-Construction Costs	**1.00**	**LS**		**0**	**0**	**0**	**0**	**9,045,270**	**9,045,270**
01 Lands and Damages	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**100,000**	**100,000**
0123 Construction Contract Documents	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**100,000**	**100,000**
USR Lands (Placeholder)	1.00	LS	Government: Non-Construction	0	0	0	0	100,000	100,000
02 Relocations	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**1,000,000**	**1,000,000**
0203 Cemetery, Utilities, & Structure	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**1,000,000**	**1,000,000**
				0.00	*0.00*	*0.00*	*0.00*		*125,000.00*
USR Range Marker Relocations	8.00	EA	Government: Non-Construction	0	0	0	0	1,000,000	1,000,000
30 Planning, Engineering and Design	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**3,972,635**	**3,972,635**

Currency in US dollars

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost
3023 Construction Contract Documents	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**3,972,635**	**3,972,635**
USR PED calculated based on 1 percent of construction cost per PM/J. Harrah via email dated 5 Feb 2013.	1.00	LS	Government: Non-Construction	0	0	0	0	3,972,635	3,972,635
31 Construction Management	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**3,972,635**	**3,972,635**
3123 Construction Contracts	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**3,972,635**	**3,972,635**
USR S&A calculated based on 1 percent of construction cost per PM/J. Harrah via email dated 5 Feb 2013.	1.00	LS	Government: Non-Construction	0	0	0	0	3,972,635	3,972,635
Jacksonville Harbor GRR2 - LPP (47' Project Depth)	**1.00**	**LS**		**0**	**623,662**	**0**	**0**	**551,933,660**	**552,557,323**
LPP - Segment 1 - 47' Project Depth	**1.00**	**LS**		**0**	**623,662**	**0**	**0**	**551,933,660**	**552,557,323**
Construction Costs	**1.00**	**LS**		**0**	**623,662**	**0**	**0**	**540,020,350**	**540,644,013**
06 Fish and Wildlife Facilities	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**56,461,679**	**56,461,679**
0603 Wildlife Facilities & Sanctuary	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**56,461,679**	**56,461,679**
USR Monitoring	1.00	LS	Government: Non-Construction	0	0	0	0	22,205,729	22,205,729
10 Breakwaters and Seawalls	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**77,919,000**	**77,919,000**
1000 Breakwaters & Seawalls	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**77,919,000**	**77,919,000**
USR NEW PNMX	1.00	LS	Government: Non-Construction	0	0	0	0	27,650,000	27,650,000
12 Navigation Ports & Harbors	**1.00**	**LS**		**0**	**623,662**	**0**	**0**	**405,639,671**	**406,263,334**
1202 Harbors	**1.00**	**LS**		**0**	**623,662**	**0**	**0**	**405,639,671**	**406,263,334**
				0.00	*0.00*	*0.00*	*0.00*		*13,000.00*
USR Infrared Camera	1.00	EA	Prime Dredging Contractor- Contract 1	0	0	0	0	13,000	13,000
				0.00	*0.00*	*0.00*	*0.00*		*3,200.00*
USR Night Vision Goggles	1.00	EA	Prime Dredging Contractor- Contract 1	0	0	0	0	3,200	3,200
Non-Construction Costs	**1.00**	**LS**		**0**	**0**	**0**	**0**	**11,913,310**	**11,913,310**
01 Lands and Damages	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**100,000**	**100,000**
0123 Construction Contract Documents	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**100,000**	**100,000**
USR Lands (Placeholder)	1.00	LS	Government:	0	0	0	0	100,000	100,000

Labor ID: LFL2010 EQ ID: EP11R03 Currency in US dollars TRACES MII Version 4.1

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost
			Non-Construction						
02 Relocations	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**1,000,000**	**1,000,000**
0203 Cemetery, Utilities, & Structure	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**1,000,000**	**1,000,000**
				0.00	*0.00*	*0.00*	*0.00*		*125,000.00*
USR Range Marker Relocations	8.00	EA	Government: Non-Construction	0	0	0	0	1,000,000	1,000,000
30 Planning, Engineering and Design	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**5,406,655**	**5,406,655**
3023 Construction Contract Documents	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**5,406,655**	**5,406,655**
USR PED calculated based on 1 percent of construction cost per PM/J. Harrah via email dated 5 Feb 2013.	1.00	LS	Government: Non-Construction	0	0	0	0	5,406,655	5,406,655
31 Construction Management	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**5,406,655**	**5,406,655**
3123 Construction Contracts	**1.00**	**LS**	**Government: Non-Construction**	**0**	**0**	**0**	**0**	**5,406,655**	**5,406,655**
USR S&A calculated based on 1 percent of construction cost per PM/J. Harrah via email dated 5 Feb 2013.	1.00	LS	Government: Non-Construction	0	0	0	0	5,406,655	5,406,655

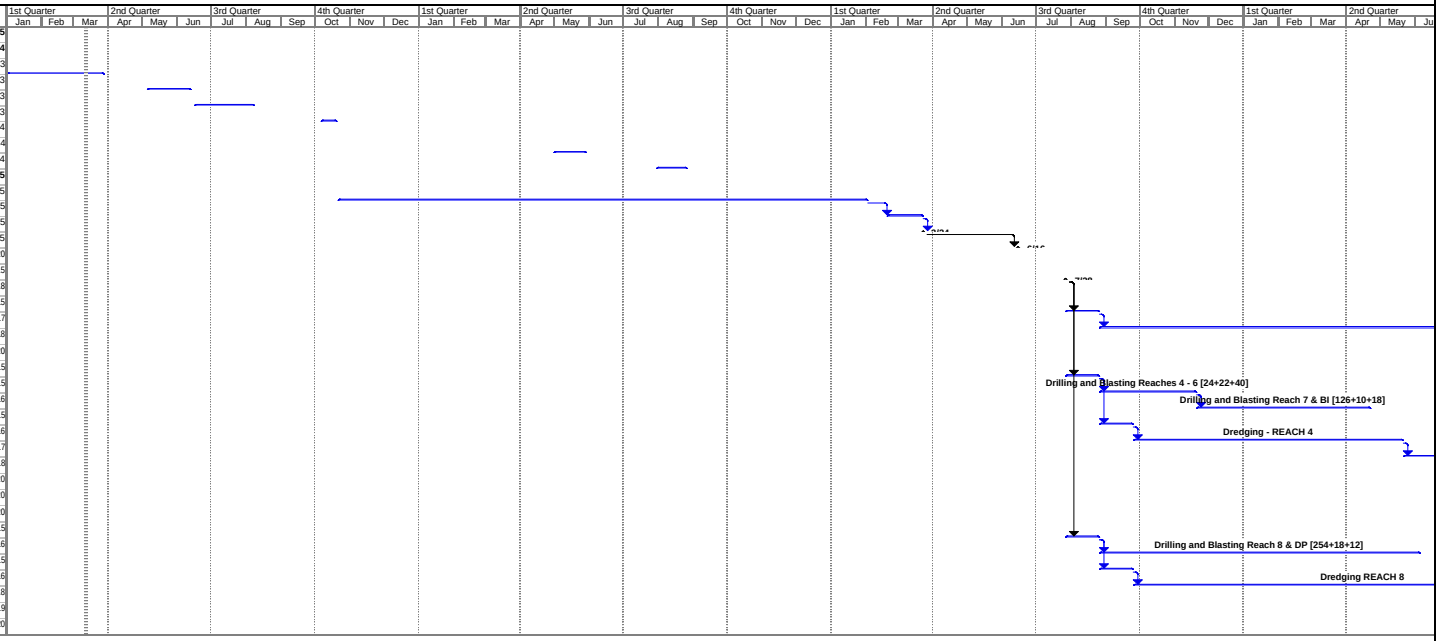
Labor ID: LFL2010 EQ ID: EP11R03 Currency in US dollars TRACES MII Version 4.1

N4. SCHEDULES

Refer to the Schedules in this report.

Jacksonville Harbor GRR2
Construction Dredging [45']

ID	Task Name	Duration	Start	Finish
1	**JAX Harbor GRR2 Harbor Deepening 45'**	**895 days**	**Jan 2 '13**	**Jun 16 '15**
2	**GRR2 Plan Formulation**	**602 days**	**Jan 2 '13**	**Aug 27 '14**
3	Draft GRR/Feasibility Report Prep	86 days	Jan 2 '13	Mar 29 '13
4	SAD/HQ Review	39 days	May 6 '13	Jun 14 '13
5	Revise Draft Report	53 days	Jun 17 '13	Aug 9 '13
6	Division Engineer Transmittal Letter	14 days	Oct 7 '13	Oct 21 '13
7	Chiefs Report (MS)	0 days	Apr 30 '14	Apr 30 '14
8	ASA (CW) Review, Letter to OMB	29 days	May 1 '14	May 30 '14
9	Authorizing Bill	27 days	Jul 31 '14	Aug 27 '14
10	**PED PHASE**	**602 days**	**Oct 22 '13**	**Jun 16 '15**
11	P&S Development	469 days	Oct 22 '13	Feb 3 '15
12	Advertise	32 days	Feb 20 '15	Mar 24 '15
13	Bid Opening	0 days	Mar 24 '15	Mar 24 '15
14	Award	0 days	Jun 16 '15	Jun 16 '15
15	JAX Harbor GRR2 Harbor Deepening 45' TSP (ODMDS)	1922 days	Jul 28 '15	Oct 31 '20
16	Issue NTP on 28 July 2015	0 days	Jul 28 '15	Jul 28 '15
17	CLAMSHELL DREDGING	924 days	Jul 28 '15	Feb 6 '18
18	Mobilization - Clamshell	30 days	Jul 28 '15	Aug 27 '15
19	Dredging - REACH 2	667 days	Aug 27 '15	Jun 24 '17
20	Dredging - REACH 3	227 days	Jun 24 '17	Feb 6 '18
21	HYDRAULIC EXCAVATOR #1 DREDGING	1899 days	Jul 28 '15	Oct 8 '20
22	Mobilization - Drilling and Blasting	30 days	Jul 28 '15	Aug 27 '15
23	Drilling and Blasting Reaches 4 - 6 [24+22+40]	86 days	Aug 27 '15	Nov 21 '15
24	Drilling and Blasting Reach 7 & BI [126+10+18]	154 days	Nov 21 '15	Apr 23 '16
25	Mobilization - Hydraulic Excavator	30 days	Aug 27 '15	Sep 26 '15
26	Dredging - REACH 4	239 days	Sep 26 '15	May 22 '16
27	Dredging - REACH 5	270 days	May 22 '16	Feb 16 '17
28	Dredging - REACH 6	543 days	Feb 16 '17	Aug 13 '18
29	Dredging REACH 7	569 days	Aug 13 '18	Mar 4 '20
30	Dredging - BLOUNT ISLAND BERTHS	218 days	Mar 4 '20	Oct 8 '20
31	HYDRAULIC EXCAVATOR #2 DREDGING	1922 days	Jul 28 '15	Oct 31 '20
32	Mobilization - Drilling and Blasting	30 days	Jul 28 '15	Aug 27 '15
33	Drilling and Blasting Reach 8 & DP [254+18+12]	284 days	Aug 27 '15	Jun 6 '16
34	Mobilization - Hydraulic Excavator	30 days	Aug 27 '15	Sep 26 '15
35	Dredging REACH 8	406 days	Sep 26 '15	Nov 5 '16
36	Dredging - BRILLS CUT TB	611 days	Nov 5 '16	Jul 9 '18
37	Dredging - DAMES POINT BERTHS	232 days	Jul 9 '18	Feb 26 '19
38	Dredging - BLOUNT ISLAND TB	613 days	Feb 26 '19	Oct 31 '20



Project: Miami Harbor Ph 3 - CONST S
Date: Mar 12 '13

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

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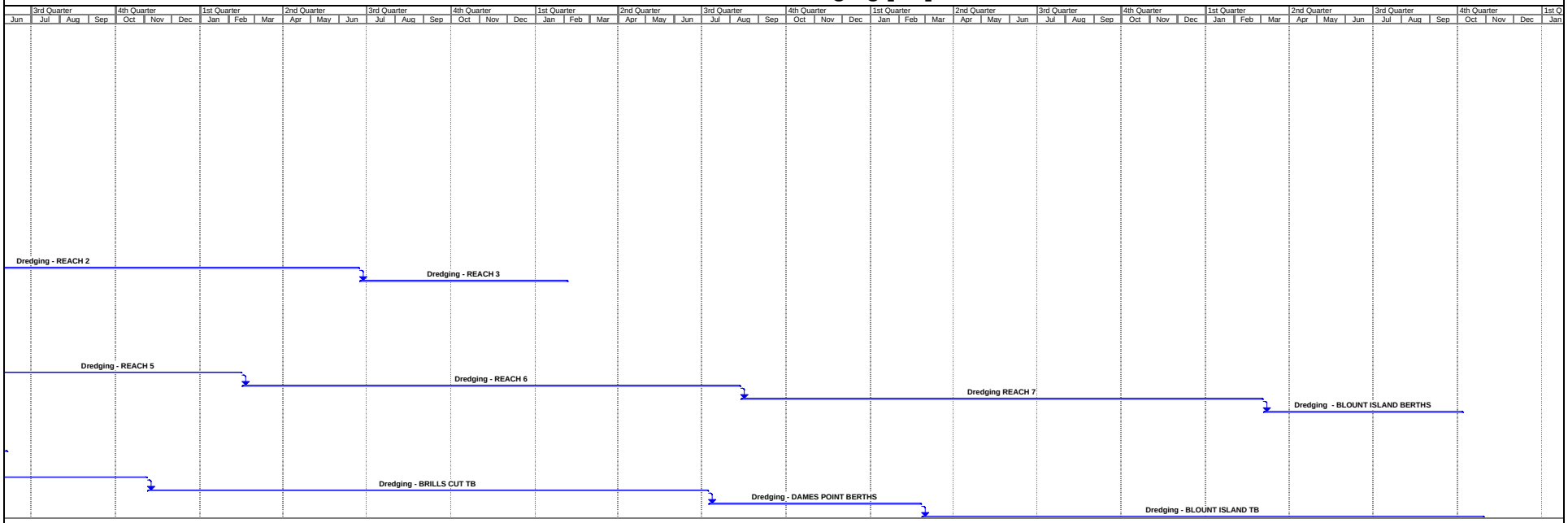
Jacksonville Harbor GRR2
Construction Dredging [45']



Project: Miami Harbor Ph 3 - CONST S
Date: Mar 12 '13

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

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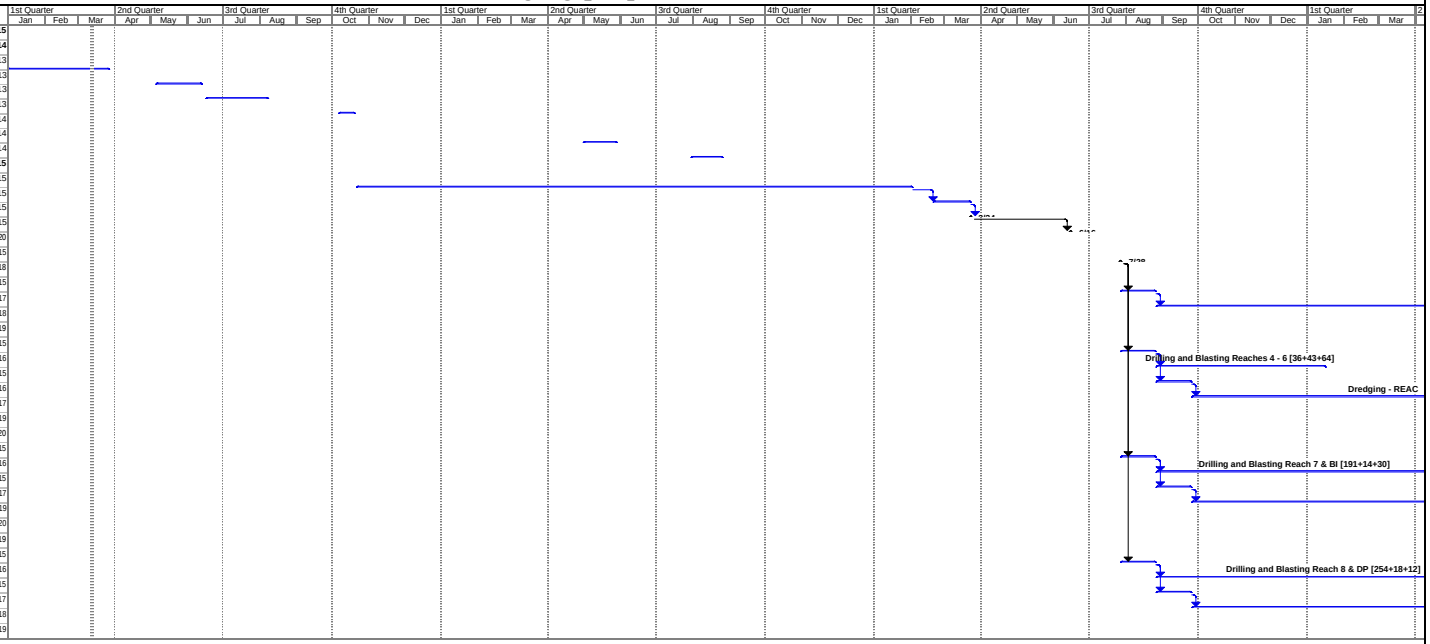
Jacksonville Harbor GRR2
Construction Dredging [47']

ID	Task Name	Duration	Start	Finish
1	**JAX Harbor GRR2 Harbor Deepening 45'**	**896 days**	**Jan 1 '13**	**Jun 16 '15**
2	**GRR2 Plan Formulation**	**603 days**	**Jan 1 '13**	**Aug 27 '14**
3	Draft GRR/Feasibility Report Prep	86 days	Jan 1 '13	Mar 28 '13
4	SAD/HQ Review	39 days	May 6 '13	Jun 14 '13
5	Revise Draft Report	53 days	Jun 17 '13	Aug 9 '13
6	Division Engineer Transmittal Letter	14 days	Oct 7 '13	Oct 21 '13
7	Chiefs Report (MS)	0 days	Apr 30 '14	Apr 30 '14
8	ASA (CW) Review, Letter to OMB	29 days	May 1 '14	May 30 '14
9	Authorizing Bill	27 days	Jul 31 '14	Aug 27 '14
10	**PED PHASE**	**602 days**	**Oct 22 '13**	**Jun 16 '15**
11	P&S Development	469 days	Oct 22 '13	Feb 3 '15
12	Advertise	32 days	Feb 20 '15	Mar 24 '15
13	Bid Opening	0 days	Mar 24 '15	Mar 24 '15
14	Award	0 days	Jun 16 '15	Jun 16 '15
15	JAX Harbor GRR2 Harbor Deepening 47' TSP (ODMDS)	1816 days	Jul 28 '15	Jul 17 '20
16	Issue NTP on 28 July 2015	0 days	Jul 28 '15	Jul 28 '15
17	CLAMSHELL DREDGING	933 days	Jul 28 '15	Feb 15 '18
18	Mobilization - Clamshell	30 days	Jul 28 '15	Aug 27 '15
19	Dredging - REACH 2	672 days	Aug 27 '15	Jun 29 '17
20	Dredging - REACH 3	231 days	Jun 29 '17	Feb 15 '18
21	HYDRAULIC EXCAVATOR #1 DREDGING	1433 days	Jul 28 '15	Jun 30 '19
22	Mobilization - Drilling and Blasting	30 days	Jul 28 '15	Aug 27 '15
23	Drilling and Blasting Reaches 4 - 6 [36+43+64]	143 days	Aug 27 '15	Jan 17 '16
24	Mobilization - Hydraulic Excavator	30 days	Aug 27 '15	Sep 26 '15
25	Dredging - REACH 4	335 days	Sep 26 '15	Aug 26 '16
26	Dredging - REACH 5	341 days	Aug 26 '16	Aug 2 '17
27	Dredging - REACH 6	697 days	Aug 2 '17	Jun 30 '19
28	HYDRAULIC EXCAVATOR #2 DREDGING	1816 days	Jul 28 '15	Jul 17 '20
29	Mobilization - Drilling and Blasting	30 days	Jul 28 '15	Aug 27 '15
30	Drilling and Blasting Reach 7 & Bl [191+14+30]	235 days	Aug 27 '15	Apr 18 '16
31	Mobilization - Hydraulic Excavator	30 days	Aug 27 '15	Sep 26 '15
32	Dredging REACH 7	753 days	Sep 26 '15	Oct 18 '17
33	Dredging - BLOUNT ISLAND TB	717 days	Oct 18 '17	Oct 5 '19
34	Dredging - BLOUNT ISLAND BERTHS	286 days	Oct 5 '19	Jul 17 '20
35	HYDRAULIC EXCAVATOR #3 DREDGING	1600 days	Jul 28 '15	Dec 14 '19
36	Mobilization - Drilling and Blasting	30 days	Jul 28 '15	Aug 27 '15
37	Drilling and Blasting Reach 8 & DP [254+18+12]	284 days	Aug 27 '15	Jun 6 '16
38	Mobilization - Hydraulic Excavator	30 days	Aug 27 '15	Sep 26 '15
39	Dredging REACH 8	563 days	Sep 26 '15	Apr 11 '17
40	Dredging - DAMES POINT BERTHS	293 days	Apr 11 '17	Jan 29 '18
41	Dredging - BRILLS CUT TB	684 days	Jan 29 '18	Dec 14 '19



Project: Miami Harbor Ph 3 - CONST S
Date: Mar 12 '13

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

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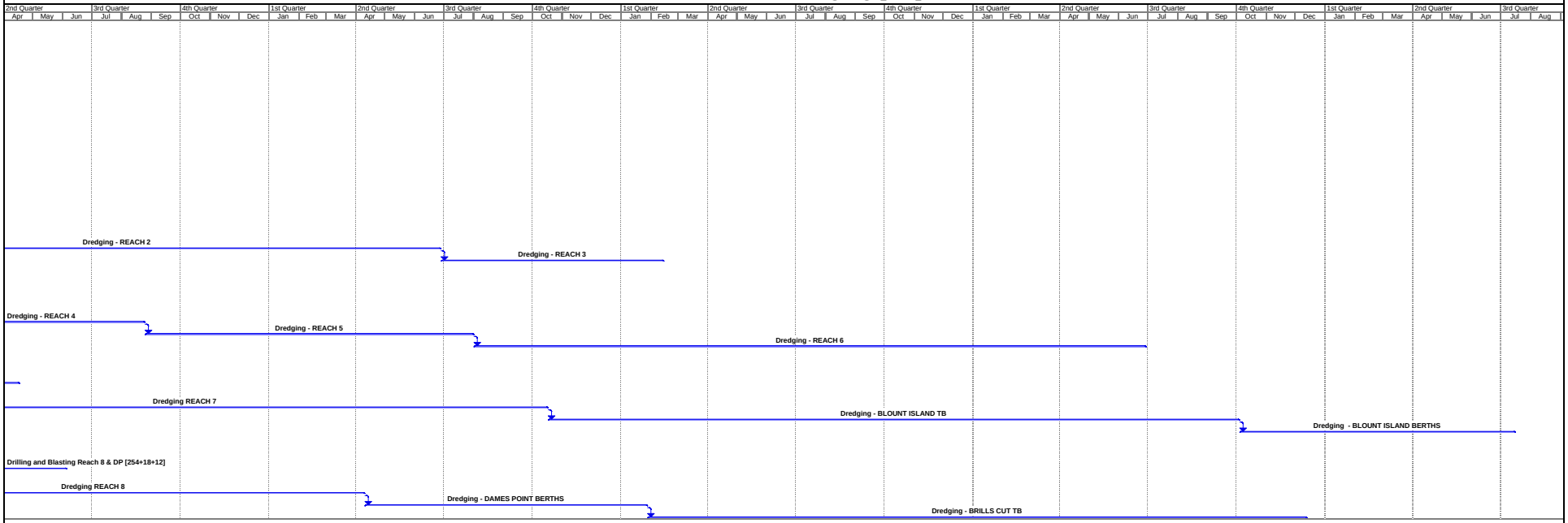
Jacksonville Harbor GRR2
Construction Dredging [47']



Project: Miami Harbor Ph 3 - CONST S
Date: Mar 12 '13

Task	Progress	Summary	Rolled Up Critical Task	Rolled Up Progress	External Tasks	Group By Summary
Critical Task	Milestone	Rolled Up Task	Rolled Up Milestone	Split	Project Summary	Deadline

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N5. RISK AND UNCERTAINTY ANALYSIS

An Abbreviated Risk Analysis was conducted according to the procedures outlined in the manual entitled; “Cost and Schedule Risk Analysis Process” dated March 2008.

N.5.1 Risk Analysis Methods

The entire PDT participated in a cost risk analysis brainstorming session to identify risks associated with the recommended plan. The risks were listed in the risk register and evaluated by the PDT. Assumptions were made as to the likelihood and impact of each risk item, as well as the probability of occurrence and magnitude of the impact if it were to occur. Adjustments were made to the analysis accordingly and the final contingency was established. The contingency was applied to each plan estimate in order to obtain the Total Project Cost.

N.5.2 Risk Analysis Results

Refer to the Abbreviated Risk Analysis in this report.

Abbreviated Risk Analysis

Jacksonville Harbor GRR2 (45' Project)

Feasibility (Recommended Plan)

Meeting Date: 24-Jan-13

PDT Members

Note: PDT involvement is commensurate with project size and involvement.

Project Management:	Jason Harrah
Planner:	Samantha Borer
Study Manager:	NAME
Contracting:	Katrina Denson
Real Estate:	Lynn Zediak
Relocations:	NAME
OTHER:	Stephanie Groleau
Engineering & Design:	NAME
Technical Lead:	Steve Conger
Geotech:	Steve Myers
Hydrology:	Steve Bratos
Civil:	NAME
Structural:	NAME
Mechanical:	NAME
Electrical:	NAME
Cost Engineering:	Randy Murray
Construction:	Glisel Torres
Operations:	Jose Bilbao
OTHER:	Mike Hollingsworth
OTHER:	Paul Stodola
OTHER:	Jimmy Matthews
OTHER:	Wendy Weaver
OTHER:	Phil Sylvester
OTHER:	Glenn Landers
OTHER:	Ray Wimbrough
OTHER:	Dick Powell

Abbreviated Risk Analysis

Project (less than $40M): **Jacksonville Harbor GRR2 (45' Project)**
Project Development Stage: **Feasibility (Recommended Plan)**
Risk Category: **Low Risk: Simple Project-No Life Safety**

Total Construction Contract Cost = **$ 410,607,545**

	CWWBS	Feature of Work	Contract Cost		% Contingency	$ Contingency	Total
	01 LANDS AND DAMAGES	Real Estate	$ 100,000		25.00%	$ 25,000	$ 125,000.00
1	02 RELOCATIONS	Aids to Navigation	$ 1,000,000		13.17%	$ 131,684	$ 1,131,683.63
2	06 FISH AND WILDLIFE FACILITIES	Mitigation & Monitoring	$ 56,461,679		31.85%	$ 17,985,115	$ 74,446,794.11
3	10 BREAKWATERS AND SEAWALLS	Port Facility Improvements	$ 1,080,000		13.76%	$ 148,596	$ 1,228,596.30
4	12 NAVIGATION, PORTS AND HARBORS	Mobilization	$ 5,390,105		36.83%	$ 1,985,008	$ 7,375,112.74
5	12 NAVIGATION, PORTS AND HARBORS	Dredging	$ 343,854,005		28.04%	$ 96,406,382	$ 440,260,386.69
6	12 NAVIGATION, PORTS AND HARBORS	Associated General Items	$ 2,821,756		22.31%	$ 629,414	$ 3,451,169.70
7			$ -		0.00%	$ -	$ -
8			$ -		0.00%	$ -	$ -
9			$ -		0.00%	$ -	$ -
10			$ -		0.00%	$ -	$ -
11			$ -		0.00%	$ -	$ -
12		Remaining Construction Items	$ -	*0.0%*	0.00%	$ -	$ -
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	$ 3,972,635		31.29%	$ 1,243,221	$ 5,215,856.27
14	31 CONSTRUCTION MANAGEMENT	Construction Management	$ 3,972,635		19.65%	$ 780,686	$ 4,753,321.20

Totals					
Real Estate	$ 100,000		25.00%	$ 25,000	$ 125,000.00
Total Construction Estimate	$ 410,607,545		28.56%	$ 117,286,198	$ 527,893,743
Total Planning, Engineering & Design	$ 3,972,635		31.29%	$ 1,243,221	$ 5,215,856
Total Construction Management	$ 3,972,635		19.65%	$ 780,686	$ 4,753,321
Total	$ 418,652,815			$ 119,335,106	$ 537,987,921

Jacksonville Harbor GRR2 (45' Project)
Feasibility (Recommended Plan)
Abbreviated Risk Analysis

Meeting Date: 24-Jan-13

Risk Level

Very Likely	2	3	4	5	5
Likely	1	2	3	4	5
Possible	0	1	2	3	4
Unlikely	0	0	1	2	3
	Negligible	Marginal	Significant	Critical	Crisis

Risk Element	Feature of Work	Concerns Pull Down Tab (ENABLE MACROS THRU TRUST CENTER) (Choose ALL that apply)	Concerns	PDT Discussions & Conclusions (Include logic & justification for choice of Likelihood & Impact)	Likelihood	Impact	Risk Level
Project Scope Growth							
						Max Potential Cost Growth	**40%**
PS-1	Aids to Navigation	• Design confidence?	• Potential for scope growth, added features and quantities?	Extensive coordination with USCG results in a high level of confidence that scope is firm.	Likely	Marginal	2
PS-2	Mitigation & Monitoring	• Design confidence?	• Potential for scope growth, added features and quantities? • Project accomplish intent? • Design confidence?	Permits are unlikely to be obtained during the feasibility phase. Current mitigation plan is set to meet certain targets which have some measure of Agency concurence. Air quality issues expected to be limited risk.	Possible	Critical	3
PS-3	Port Facility Improvements	• Design confidence?	• Project accomplish intent? • Design confidence?	Current port consultant has been engaged on dock work design for at least five years and have solid understanding of existing dock capacity.	Unlikely	Marginal	0
PS-4	Mobilization	• Potential for scope growth, added features and quantities?	• Potential for scope growth, added features and quantities?	Unless additional disposal areas are identified the number of mobilizations will increase.	Likely	Critical	4
PS-5	Dredging	• Investigations sufficient to support design assumptions?	• Potential for scope growth, added features and quantities? • Investigations sufficient to support design assumptions?	Extensive project study (modeling, simulation, borings, etc.) and recent experience in similar work results in high degree of confidence in design assumptions. Schedule may increase if additional disposal sites are not identified.	Likely	Significant	3
PS-6	Associated General Items	• Potential for scope growth, added features and quantities?	• Potential for scope growth, added features and quantities?	Environmental windows and/or additional monitoring may be required due to blasting.	Likely	Marginal	2
PS-7	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-8	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-9	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-10	0	• Investigations sufficient to support design assumptions?			Unlikely	Negligible	0

PS-11	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-12	Remaining Construction Items	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-13	Planning, Engineering, & Design	• Design confidence?		Additional effort may be necessary to fully develop the LPP design including alternative disposal sites such as "Island Complex"	Possible	Significant	2
PS-14	Construction Management	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
Acquisition Strategy							
						Max Potential Cost Growth	**30%**
AS-1	Aids to Navigation	• Bid schedule developed to reduce quantity risks?	• Contracting plan firmly established?	Construction may need to be added to COE contract if USCG funding is not timely.	Likely	Negligible	1
AS-2	Mitigation & Monitoring	• Contracting plan firmly established?	• Contracting plan firmly established?	Could higher costs result from including mitigation construction in dredging contract.	Unlikely	Marginal	0
AS-3	Port Facility Improvements	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
AS-4	Mobilization	• Limited bid competition anticipated?	• Contracting plan firmly established? • Accelerated schedule or harsh weather schedule? • Limited bid competition anticipated?	Contract acquisition strategy not defined at this time. Weather not an issue based on local historical project data. Contract size will limit field of interested bidders.	Likely	Marginal	2
AS-5	Dredging	• Limited bid competition anticipated?	• Contracting plan firmly established? • Accelerated schedule or harsh weather schedule? • Limited bid competition anticipated?	Contract acquisition strategy not defined at this time. Weather not an issue based on local historical project data. Contract size will limit field of interested bidders.	Likely	Marginal	2
AS-6	Associated General Items	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-7	0	• Contracting plan firmly established?			Unlikely	Negligible	0

AS-8	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-9	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-10	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-11	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-12	Remaining Construction Items	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-13	Planning, Engineering, & Design	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-14	Construction Management	• Contracting plan firmly established?			Unlikely	Negligible	0
Construction Elements							
						Max Potential Cost Growth	**15%**
CE-1	Aids to Navigation	• Potential for construction modification and claims?	• Unique construction methods?	USCG ATN could be speciality contractor work - but not uncommon for marine contractors.	Unlikely	Negligible	0
CE-2	Mitigation & Monitoring	• Special equipment or subcontractors needed?	• High risk or complex construction elements, site access, in-water? • Special equipment or subcontractors needed?	Environmental sub contractors required for construction of mitigation features.	Very LIKELY	Negligible	2
CE-3	Port Facility Improvements	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0

CE-4	Mobilization	• Special mobilization?	• Special mobilization?	Multiple contracts (hence multiple mobilizations) will be required to accomplish project in five years. Schedule may be too aggressive.	Likely	Significant	3
CE-5	Dredging	• Accelerated schedule or harsh weather schedule?	• Accelerated schedule or harsh weather schedule?	Identification of multiple disposal sites (ODMDS, Beach, Nearshore, Island, etc.) necessary for concurrent contracts.	Possible	Significant	2
CE-6	Associated General Items	• Special equipment or subcontractors needed?	• Special equipment or subcontractors needed? • Special equipment or subcontractors needed?	Environmental monitors for blasting may need to be specialized subcontractors. Special attention needed for monitoring Right Whales during transit to ODMDS and Manatees during blasting.	Likely	Significant	3
CE-7	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-8	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-9	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-10	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-11	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-12	Remaining Construction Items	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-13	Planning, Engineering, & Design	• Water care and diversion plan?	• Water care and diversion plan?	Section 103 testing requirements for ODMDS disposal not yet complete and may alter disposal area designation.	Possible	Significant	2
CE-14	Construction Management	• Potential for construction modification and claims?	• Potential for construction modification and claims?	Differing site conditions may add to contract duration.	Unlikely	Significant	1

Quantities for Current Scope

	Max Potential Cost Growth	**20%**

Q-1	Aids to Navigation	• Quality control check applied?			Unlikely	Negligible	0
Q-2	Mitigation & Monitoring	• Appropriate methods applied to calculate quantities?	• Appropriate methods applied to calculate quantities?	Current design of mitigation plan is based on best available data and set to meet certain targets which have some measure of Agency concurence. Final permit conditions may have different and/or additional requirements. All modeling is not complete at this time.	Very LIKELY	Marginal	3
Q-3	Port Facility Improvements	• Sufficient investigations to develop quantities?	• Sufficient investigations to develop quantities?	Port consultant has established quantities based on preliminary data which may cause costs to be understated.	Likely	Marginal	2
Q-4	Mobilization	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-5	Dredging	• Quality control check applied?	• Level of confidence based on design and assumptions? • Appropriate methods applied to calculate quantities? • Sufficient investigations to develop quantities? • Quality control check applied?	Do current quantities for dredge material characterization between rock and non-rock adequately depict actual conditions. Core borings supplemented by resistivity tests add to level of confidence.	Possible	Significant	2
Q-6	Associated General Items	• Sufficient investigations to develop quantities?	• Sufficient investigations to develop quantities?	Final permit requirements will establish scope of work for turbidity and endangered species monitoring which may exceed current estimates.	Likely	Negligible	1
Q-7	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-8	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-9	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-10	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-11	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-12	Remaining Construction Items	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-13	Planning, Engineering, & Design	• Appropriate methods applied to calculate quantities?	• Appropriate methods applied to calculate quantities?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3
Q-14	Construction Management	• Appropriate methods applied to calculate quantities?	• Appropriate methods applied to calculate quantities?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3
Specialty Fabrication or Equipment							
						Max Potential Cost Growth	**50%**

FE-1	Aids to Navigation	• Risk of specialty equipment functioning first time? Test?			Unlikely	Negligible	0
FE-2	Mitigation & Monitoring	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-3	Port Facility Improvements	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-4	Mobilization	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-5	Dredging	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-6	Associated General Items	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-7	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-8	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-9	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-10	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-11	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-12	Remaining Construction Items	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-13	Planning, Engineering, & Design	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-14	Construction Management	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0

Cost Estimate Assumptions

	Max Potential Cost Growth	**25%**

CT-1	Aids to Navigation	• Lack confidence on critical cost items?			Unlikely	Negligible	0
CT-2	Mitigation & Monitoring	• Lack confidence on critical cost items?	• Lack confidence on critical cost items?	Current design of mitigation plan is based on best available data and set to meet certain targets which have some measure of Agency concurence. Final permit conditions may have different and/or additional requirements.	Very LIKELY	Marginal	3
CT-3	Port Facility Improvements	• Reliability and number of key quotes?	• Reliability and number of key quotes?	Port consultant has established quantities based on preliminary data which may cause costs to be understated.	Likely	Marginal	2
CT-4	Mobilization	• Assumptions regarding crew, productivity, overtime?	• Assumptions related to prime and subcontractor markups/assignments? • Assumptions regarding crew, productivity, overtime?	Will bidders vary significantly from historical pricing?	Unlikely	Significant	1
CT-5	Dredging	• Assumptions regarding crew, productivity, overtime?	• Assumptions related to prime and subcontractor markups/assignments? • Assumptions regarding crew, productivity, overtime?	Will bidders vary significantly from historical pricing? Construction sequencing may affect costs if alternate disposals sites are more remote.	Unlikely	Significant	1
CT-6	Associated General Items	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-7	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-8	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-9	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-10	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-11	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-12	Remaining Construction Items	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-13	Planning, Engineering, & Design	• Reliability and number of key quotes?	• Reliability and number of key quotes?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3

CT-14	Construction Management	• Reliability and number of key quotes?	• Reliability and number of key quotes?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3
External Project Risks							
						Max Potential Cost Growth	**20%**
EX-1	Aids to Navigation	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	USCG funding may be restricted causing this work to be covered under COE contract.	Likely	Negligible	1
EX-2	Mitigation & Monitoring	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Extensive groundwork on mitigation opportunities will reduce overall effect on project.	Likely	Negligible	1
EX-3	Port Facility Improvements	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Will dock construction affect COE dredging schedule?	Possible	Marginal	1
EX-4	Mobilization	• Potential for market volatility impacting competition, pricing?	• Unanticipated inflations in fuel, key materials? • Potential for market volatility impacting competition, pricing?	Fuel price increases and market volitilaty directly affect bid prices.	Likely	Negligible	1
EX-5	Dredging	• Potential for severe adverse weather?	• Unanticipated inflations in fuel, key materials? • Potential for market volatility impacting competition, pricing? • Potential for severe adverse weather?	Fuel price increases and market volitilaty directly affect bid prices. Weather delays are considered in historical production analysis.	Likely	Negligible	1
EX-6	Associated General Items	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Project magnitude and scope (including blasting) could attract extensive attention from public and regulatory agencies resulting in higher monitoring costs.	Likely	Significant	3
EX-7	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-8	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-9	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-10	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-11	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-12	Remaining Construction Items	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-13	Planning, Engineering, & Design	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Accelerated schedule for feasibility report will shift additional work into PED phase.	Very LIKELY	Marginal	3
EX-14	Construction Management	• Potential for severe adverse weather?			Unlikely	Negligible	0

Jacksonville Harbor GRR2 (45' Project)
Feasibility (Recommended Plan)
Abbreviated Risk Analysis

Typical Risk Elements	Potential Risk Areas													
	Aids to Navigation	Mitigation & Monitoring	Port Facility Improvements	Mobilization	Dredging	Associated General Items	0	0	0	0	0	Remaining Construction Items	Planning, Engineering, & Design	Construction Management
Project Scope Growth	2	3	-	4	3	2	-	-	-	-	-	-	2	-
Acquisition Strategy	1	-	-	2	2	-	-	-	-	-	-	-	-	-
Construction Elements	-	2	-	3	2	3	-	-	-	-	-	-	2	1
Quantities for Current Scope	-	3	2	-	2	1	-	-	-	-	-	-	3	3
Specialty Fabrication or Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost Estimate Assumptions	-	3	2	1	1	-	-	-	-	-	-	-	3	3
External Project Risks	1	1	1	1	1	3	-	-	-	-	-	-	3	-

Abbreviated Risk Analysis

Jacksonville Harbor GRR2 (47' Project)

Feasibility (Recommended Plan)

Meeting Date: 24-Jan-13

PDT Members

Note: PDT involvement is commensurate with project size and involvement.

Project Management:	Jason Harrah
Planner:	Samantha Borer
Study Manager:	NAME
Contracting:	Katrina Denson
Real Estate:	Lynn Zediak
Relocations:	NAME
OTHER:	Stephanie Groleau
Engineering & Design:	NAME
Technical Lead:	Steve Conger
Geotech:	Steve Myers
Hydrology:	Steve Bratos
Civil:	NAME
Structural:	NAME
Mechanical:	NAME
Electrical:	NAME
Cost Engineering:	Randy Murray
Construction:	Glisel Torres
Operations:	Jose Bilbao
OTHER:	Mike Hollingsworth
OTHER:	Paul Stodola
OTHER:	Jimmy Matthews
OTHER:	Wendy Weaver
OTHER:	Phil Sylvester
OTHER:	Glenn Landers
OTHER:	Ray Wimbrough
OTHER:	Dick Powell

Abbreviated Risk Analysis

Project (less than $40M): **Jacksonville Harbor GRR2 (47' Project)**
Project Development Stage: **Feasibility (Recommended Plan)**
Risk Category: **Low Risk: Simple Project-No Life Safety**

Total Construction Contract Cost = **$ 558,413,803**

	CWWBS	Feature of Work	Contract Cost		% Contingency	$ Contingency	Total
	01 LANDS AND DAMAGES	Real Estate	$ 100,000		25.00%	$ 25,000	$ 125,000.00
1	02 RELOCATIONS	Aids to Navigation	$ 1,000,000		13.17%	$ 131,684	$ 1,131,683.63
2	06 FISH AND WILDLIFE FACILITIES	Mitigation & Monitoring	$ 56,461,679		41.83%	$ 23,620,526	$ 80,082,205.47
3	10 BREAKWATERS AND SEAWALLS	Port Facility Improvements	$ 77,919,000		22.91%	$ 17,847,361	$ 95,766,360.65
4	12 NAVIGATION, PORTS AND HARBORS	Mobilization	$ 7,645,510		36.83%	$ 2,815,603	$ 10,461,113.13
5	12 NAVIGATION, PORTS AND HARBORS	Dredging	$ 412,675,542		28.04%	$ 115,701,883	$ 528,377,424.89
6	12 NAVIGATION, PORTS AND HARBORS	Associated General Items	$ 2,712,072		22.31%	$ 604,948	$ 3,317,019.87
7			$ -		0.00%	$ -	$ -
8			$ -		0.00%	$ -	$ -
9			$ -		0.00%	$ -	$ -
10			$ -		0.00%	$ -	$ -
11			$ -		0.00%	$ -	$ -
12		Remaining Construction Items	$ -	*0.0%*	0.00%	$ -	$ -
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	$ 5,406,655		31.29%	$ 1,691,992	$ 7,098,647.47
14	31 CONSTRUCTION MANAGEMENT	Construction Management	$ 5,406,655		19.65%	$ 1,062,494	$ 6,469,149.03

Totals					
Real Estate	$ 100,000		25.00%	$ 25,000	$ 125,000.00
Total Construction Estimate	$ 558,413,803		28.78%	$ 160,722,005	$ 719,135,808
Total Planning, Engineering & Design	$ 5,406,655		31.29%	$ 1,691,992	$ 7,098,647
Total Construction Management	$ 5,406,655		19.65%	$ 1,062,494	$ 6,469,149
Total	$ 569,327,113			$ 163,501,491	$ 732,828,604

Jacksonville Harbor GRR2 (47' Project)
Feasibility (Recommended Plan)
Abbreviated Risk Analysis

Meeting Date: 24-Jan-13

Risk Level

Very Likely	2	3	4	5	5
Likely	1	2	3	4	5
Possible	0	1	2	3	4
Unlikely	0	0	1	2	3
	Negligible	Marginal	Significant	Critical	Crisis

Risk Element	Feature of Work	Concerns Pull Down Tab (ENABLE MACROS THRU TRUST CENTER) (Choose ALL that apply)	Concerns	PDT Discussions & Conclusions (Include logic & justification for choice of Likelihood & Impact)	Likelihood	Impact	Risk Level
Project Scope Growth							
						Max Potential Cost Growth	**40%**
PS-1	Aids to Navigation	• Design confidence?	• Potential for scope growth, added features and quantities?	Extensive coordination with USCG results in a high level of confidence that scope is firm.	Likely	Marginal	2
PS-2	Mitigation & Monitoring	• Design confidence?	• Potential for scope growth, added features and quantities? • Project accomplish intent? • Design confidence?	Permits are unlikely to be obtained during the feasibility phase. Current mitigation plan is set to meet certain targets which have some measure of Agency concurence. Air quality issues expected to be limited risk. Additional depth may result in increased regulatory requirements.	Likely	Critical	4
PS-3	Port Facility Improvements	• Investigations sufficient to support design assumptions?	• Project accomplish intent? • Design confidence? • Investigations sufficient to support design assumptions?	Current port consultant has been engaged on dock work design for at least five years and have solid understanding of existing dock capacity. Concern exists that increasing existing docks is more complicated than building new docks.	Likely	Significant	3
PS-4	Mobilization	• Potential for scope growth, added features and quantities?	• Potential for scope growth, added features and quantities?	Unless additional disposal areas are identified the number of mobilizations will increase.	Likely	Critical	4
PS-5	Dredging	• Investigations sufficient to support design assumptions?	• Potential for scope growth, added features and quantities? • Investigations sufficient to support design assumptions?	Extensive project study (modeling, simulation, borings, etc.) and recent experience in similar work results in high degree of confidence in design assumptions. Schedule may increase if additional disposal sites are not identified.	Likely	Significant	3
PS-6	Associated General Items	• Potential for scope growth, added features and quantities?	• Potential for scope growth, added features and quantities?	Environmental windows and/or additional monitoring may be required due to blasting.	Likely	Marginal	2
PS-7	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-8	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-9	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-10	0	• Investigations sufficient to support design assumptions?			Unlikely	Negligible	0

PS-11	0	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-12	Remaining Construction Items	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
PS-13	Planning, Engineering, & Design	• Design confidence?		Additional effort may be necessary to fully develop the LPP design including alternative disposal sites such as "Island Complex"	Possible	Significant	2
PS-14	Construction Management	• Potential for scope growth, added features and quantities?			Unlikely	Negligible	0
Acquisition Strategy							
						Max Potential Cost Growth	**30%**
AS-1	Aids to Navigation	• Bid schedule developed to reduce quantity risks?	• Contracting plan firmly established?	Construction may need to be added to COE contract if USCG funding is not timely.	Likely	Negligible	1
AS-2	Mitigation & Monitoring	• Contracting plan firmly established?	• Contracting plan firmly established?	Could higher costs result from including mitigation construction in dredging contract.	Unlikely	Marginal	0
AS-3	Port Facility Improvements	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
AS-4	Mobilization	• Limited bid competition anticipated?	• Contracting plan firmly established? • Accelerated schedule or harsh weather schedule? • Limited bid competition anticipated?	Contract acquisition strategy not defined at this time. Weather not an issue based on local historical project data. Contract size will limit field of interested bidders.	Likely	Marginal	2
AS-5	Dredging	• Limited bid competition anticipated?	• Contracting plan firmly established? • Accelerated schedule or harsh weather schedule? • Limited bid competition anticipated?	Contract acquisition strategy not defined at this time. Weather not an issue based on local historical project data. Contract size will limit field of interested bidders.	Likely	Marginal	2
AS-6	Associated General Items	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-7	0	• Contracting plan firmly established?			Unlikely	Negligible	0

AS-8	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-9	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-10	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-11	0	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-12	Remaining Construction Items	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-13	Planning, Engineering, & Design	• Contracting plan firmly established?			Unlikely	Negligible	0
AS-14	Construction Management	• Contracting plan firmly established?			Unlikely	Negligible	0
Construction Elements							
						Max Potential Cost Growth	**15%**
CE-1	Aids to Navigation	• Potential for construction modification and claims?	• Unique construction methods?	USCG ATN could be speciality contractor work - but not uncommon for marine contractors.	Unlikely	Negligible	0
CE-2	Mitigation & Monitoring	• Special equipment or subcontractors needed?	• High risk or complex construction elements, site access, in-water? • Special equipment or subcontractors needed?	Environmental sub contractors required for construction of mitigation features.	Very LIKELY	Negligible	2
CE-3	Port Facility Improvements	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0

CE-4	Mobilization	• Special mobilization?	• Special mobilization?	Multiple contracts (hence multiple mobilizations) will be required to accomplish project in five years. Schedule may be too aggressive.	Likely	Significant	3
CE-5	Dredging	• Accelerated schedule or harsh weather schedule?	• Accelerated schedule or harsh weather schedule?	Identification of multiple disposal sites (ODMDS, Beach, Nearshore, Island, etc.) necessary for concurrent contracts.	Possible	Significant	2
CE-6	Associated General Items	• Special equipment or subcontractors needed?	• Special equipment or subcontractors needed? • Special equipment or subcontractors needed?	Environmental monitors for blasting may need to be specialized subcontractors. Special attention needed for monitoring Right Whales during transit to ODMDS and Manatees during blasting.	Likely	Significant	3
CE-7	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-8	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-9	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-10	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-11	0	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-12	Remaining Construction Items	• Accelerated schedule or harsh weather schedule?			Unlikely	Negligible	0
CE-13	Planning, Engineering, & Design	• Water care and diversion plan?	• Water care and diversion plan?	Section 103 testing requirements for ODMDS disposal not yet complete and may alter disposal area designation.	Possible	Significant	2
CE-14	Construction Management	• Potential for construction modification and claims?	• Potential for construction modification and claims?	Differing site conditions may add to contract duration.	Unlikely	Significant	1

Quantities for Current Scope

	Max Potential Cost Growth	**20%**

Q-1	Aids to Navigation	• Quality control check applied?			Unlikely	Negligible	0
Q-2	Mitigation & Monitoring	• Appropriate methods applied to calculate quantities?	• Appropriate methods applied to calculate quantities?	Current design of mitigation plan is based on best available data and set to meet certain targets which have some measure of Agency concurence. Final permit conditions may have different and/or additional requirements. All modeling is not complete at this time.	Very LIKELY	Marginal	3
Q-3	Port Facility Improvements	• Sufficient investigations to develop quantities?	• Sufficient investigations to develop quantities?	Port consultant has established quantities based on preliminary data which may cause costs to be understated.	Likely	Marginal	2
Q-4	Mobilization	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-5	Dredging	• Quality control check applied?	• Level of confidence based on design and assumptions? • Appropriate methods applied to calculate quantities? • Sufficient investigations to develop quantities? • Quality control check applied?	Do current quantities for dredge material characterization between rock and non-rock adequately depict actual conditions. Core borings supplemented by resistivity tests add to level of confidence.	Possible	Significant	2
Q-6	Associated General Items	• Sufficient investigations to develop quantities?	• Sufficient investigations to develop quantities?	Final permit requirements will establish scope of work for turbidity and endangered species monitoring which may exceed current estimates.	Likely	Negligible	1
Q-7	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-8	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-9	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-10	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-11	0	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-12	Remaining Construction Items	• Level of confidence based on design and assumptions?			Unlikely	Negligible	0
Q-13	Planning, Engineering, & Design	• Appropriate methods applied to calculate quantities?	• Appropriate methods applied to calculate quantities?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3
Q-14	Construction Management	• Appropriate methods applied to calculate quantities?	• Appropriate methods applied to calculate quantities?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3
Specialty Fabrication or Equipment							
						Max Potential Cost Growth	**50%**

FE-1	Aids to Navigation	• Risk of specialty equipment functioning first time? Test?			Unlikely	Negligible	0
FE-2	Mitigation & Monitoring	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-3	Port Facility Improvements	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-4	Mobilization	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-5	Dredging	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-6	Associated General Items	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-7	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-8	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-9	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-10	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-11	0	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-12	Remaining Construction Items	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-13	Planning, Engineering, & Design	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0
FE-14	Construction Management	• Unusual parts, material or equipment manufactured or installed?			Unlikely	Negligible	0

Cost Estimate Assumptions

	Max Potential Cost Growth	**25%**

CT-1	Aids to Navigation	• Lack confidence on critical cost items?			Unlikely	Negligible	0
CT-2	Mitigation & Monitoring	• Lack confidence on critical cost items?	• Lack confidence on critical cost items?	Current design of mitigation plan is based on best available data and set to meet certain targets which have some measure of Agency concurence. Final permit conditions may have different and/or additional requirements.	Very LIKELY	Marginal	3
CT-3	Port Facility Improvements	• Reliability and number of key quotes?	• Reliability and number of key quotes?	Port consultant has established quantities based on preliminary data which may cause costs to be understated.	Likely	Marginal	2
CT-4	Mobilization	• Assumptions regarding crew, productivity, overtime?	• Assumptions related to prime and subcontractor markups/assignments? • Assumptions regarding crew, productivity, overtime?	Will bidders vary significantly from historical pricing?	Unlikely	Significant	1
CT-5	Dredging	• Assumptions regarding crew, productivity, overtime?	• Assumptions related to prime and subcontractor markups/assignments? • Assumptions regarding crew, productivity, overtime?	Will bidders vary significantly from historical pricing? Construction sequencing may affect costs if alternate disposals sites are more remote.	Unlikely	Significant	1
CT-6	Associated General Items	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-7	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-8	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-9	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-10	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-11	0	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-12	Remaining Construction Items	• Reliability and number of key quotes?			Unlikely	Negligible	0
CT-13	Planning, Engineering, & Design	• Reliability and number of key quotes?	• Reliability and number of key quotes?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3

CT-14	Construction Management	• Reliability and number of key quotes?	• Reliability and number of key quotes?	Cost based on 1% of construction cost and may not be sufficient for actual expenditures.	Likely	Significant	3
External Project Risks							
						Max Potential Cost Growth	**20%**
EX-1	Aids to Navigation	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	USCG funding may be restricted causing this work to be covered under COE contract.	Likely	Negligible	1
EX-2	Mitigation & Monitoring	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Extensive groundwork on mitigation opportunities will reduce overall effect on project.	Likely	Negligible	1
EX-3	Port Facility Improvements	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Will dock construction affect COE dredging schedule?	Possible	Marginal	1
EX-4	Mobilization	• Potential for market volatility impacting competition, pricing?	• Unanticipated inflations in fuel, key materials? • Potential for market volatility impacting competition, pricing?	Fuel price increases and market volitilaty directly affect bid prices.	Likely	Negligible	1
EX-5	Dredging	• Potential for severe adverse weather?	• Unanticipated inflations in fuel, key materials? • Potential for market volatility impacting competition, pricing? • Potential for severe adverse weather?	Fuel price increases and market volitilaty directly affect bid prices. Weather delays are considered in historical production analysis.	Likely	Negligible	1
EX-6	Associated General Items	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Project magnitude and scope (including blasting) could attract extensive attention from public and regulatory agencies resulting in higher monitoring costs.	Likely	Significant	3
EX-7	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-8	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-9	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-10	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-11	0	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-12	Remaining Construction Items	• Potential for severe adverse weather?			Unlikely	Negligible	0
EX-13	Planning, Engineering, & Design	• Political influences, lack of support, obstacles?	• Political influences, lack of support, obstacles?	Accelerated schedule for feasibility report will shift additional work into PED phase.	Very LIKELY	Marginal	3
EX-14	Construction Management	• Potential for severe adverse weather?			Unlikely	Negligible	0

Jacksonville Harbor GRR2 (47' Project)
Feasibility (Recommended Plan)
Abbreviated Risk Analysis

Typical Risk Elements	Potential Risk Areas													
	Aids to Navigation	Mitigation & Monitoring	Port Facility Improvements	Mobilization	Dredging	Associated General Items	0	0	0	0	0	Remaining Construction Items	Planning, Engineering, & Design	Construction Management
Project Scope Growth	2	4	3	4	3	2	-	-	-	-	-	-	2	-
Acquisition Strategy	1	-	-	2	2	-	-	-	-	-	-	-	-	-
Construction Elements	-	2	-	3	2	3	-	-	-	-	-	-	2	1
Quantities for Current Scope	-	3	2	-	2	1	-	-	-	-	-	-	3	3
Specialty Fabrication or Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost Estimate Assumptions	-	3	2	1	1	-	-	-	-	-	-	-	3	3
External Project Risks	1	1	1	1	1	3	-	-	-	-	-	-	3	-

N6. TOTAL PROJECT COST SUMMARY

The Total Project Cost Summary (TPCS) addresses inflation through project completion (accomplished by escalation to mid-point of construction per ER 1110-2-1302, Appendix C, Page C-2). It is based on the scope of the Recommended Plan and the official project schedule. The TPCS includes Federal and Non-Federal costs for Lands and Damages, all construction features, PED, S&A, along with the appropriate contingencies and escalation associated with each of these activities. The TPCS is formatted according to the WBS and uses Civil Works Construction Cost Indexing System factors for escalation (EM 1110-2-1304) of construction costs and Office of Management and Budget (EC 11-2-18X, 20 Feb 2008) factors for escalation of PED and S&A costs. The Total Project Cost Summary was prepared using the MCACES/MII cost estimate on the Recommended Plan, as well as the contingency set by the risk analysis and the official project schedule.

N.6.1 Total Project Cost Summary Spreadsheet

Refer to the Total Project Cost Summary Spreadsheet in this report.

****** TOTAL PROJECT COST SUMMARY ******

PROJECT: Jacksonville Harbor Deepening GRR2 [45' NED]
LOCATION: Jacksonville, FL

DISTRICT: SAJ Jacksonville PREPARED: 3/8/2013
POC: CHIEF, COST ENGINEERING, Tracy Leeser

This Estimate reflects the scope and schedule in report; Jacksonville Harbor GRR2 Draft Report

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
						Program Year (Budget EC): 2015								
						Effective Price Level Date: 1 OCT 14								
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	**TOTAL ($K)**	Spent Thru: 1-Oct-12 ($K)		COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*
02	RELOCATIONS	$1,000	$132	13%	$1,132	0.0%	$1,000	$132	$1,132	$0		$1,096	$144	$1,241
06	FISH & WILDLIFE FACILITIES	$56,462	$17,985	32%	$74,447	0.0%	$56,462	$17,985	$74,447	$0		$61,892	$19,715	$81,607
10	BREAKWATER & SEAWALLS	$1,080	$149	14%	$1,229	0.0%	$1,080	$149	$1,229	$0		$1,184	$163	$1,347
12	NAVIGATION PORTS & HARBORS	$5,390	$1,985	37%	$7,375	0.0%	$5,390	$1,985	$7,375	$0		$5,908	$2,176	$8,084
12	NAVIGATION PORTS & HARBORS	$343,854	$96,406	28%	$440,260	0.0%	$343,854	$96,406	$440,260	$0		$376,924	$105,678	$482,602
12	NAVIGATION PORTS & HARBORS	$2,822	$629	22%	$3,451	0.0%	$2,822	$629	$3,451	$0		$3,093	$690	$3,783
	CONSTRUCTION ESTIMATE TOTALS:	$410,608	$117,286		$527,894	0.0%	$410,608	$117,286	$527,894	$0		$450,097	$128,566	$578,663
01	LANDS AND DAMAGES	$100	$25	25%	$125	0.0%	$100	$25	$125	$0		$104	$26	$130
30	PLANNING, ENGINEERING & DESIGN	$3,973	$1,243	31%	$5,216	0.0%	$3,973	$1,243	$5,216	$0		$4,164	$1,303	$5,467
31	CONSTRUCTION MANAGEMENT	$3,973	$781	20%	$4,753	0.0%	$3,973	$781	$4,753	$0		$4,788	$941	$5,729
	PROJECT COST TOTALS:	$418,653	$119,335	29%	$537,988		$418,653	$119,335	**$537,988**	$0		$459,153	$130,836	$589,989

Mandatory by Regulation	CHIEF, COST ENGINEERING, Tracy Leeser
Mandatory by Regulation	PROJECT MANAGER, Jason Harrah
Mandatory by Regulation	CHIEF, REAL ESTATE, Audrey Ormerod
	CHIEF, PLANNING, Eric Bush
	CHIEF, ENGINEERING, Laureen Borochaner
	CHIEF, OPERATIONS, Jim Jeffords
	CHIEF, CONSTRUCTION, Steve Duba
	CHIEF, CONTRACTING, Carlos Clarke
	CHIEF, PM-PB, Dan Haubner
	CHIEF, DPM, Dave Hobbie

ESTIMATED FEDERAL COST:	**50%**	**$294,995**
ESTIMATED NON-FEDERAL COST:	**50%**	**$294,995**
ESTIMATED TOTAL PROJECT COST:		**$589,989**

****** TOTAL PROJECT COST SUMMARY ******

****** CONTRACT COST SUMMARY ******

PROJECT: Jacksonville Harbor Deepening GRR2 [45' NED]
LOCATION: Jacksonville, FL
This Estimate reflects the scope and schedule in report; Jacksonville Harbor GRR2 Draft Report

DISTRICT: SAJ Jacksonville PREPARED: 3/8/2013
POC: CHIEF, COST ENGINEERING, Tracy Leeser

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 8-Mar-13 Effective Price Level: 1-Oct-12				Program Year (Budget EC): 2015 Effective Price Level Date: 1 OCT 14								
				RISK BASED										
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	TOTAL ($K)	Mid-Point Date	INFLATED (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*P*	*L*	*M*	*N*	*O*
	PHASE 1 or CONTRACT 1													
02	RELOCATIONS	$1,000	$132	13%	$1,132	0.0%	$1,000	$132	$1,132	2018Q2	9.6%	$1,096	$144	$1,241
06	FISH & WILDLIFE FACILITIES	$56,462	$17,985	32%	$74,447	0.0%	$56,462	$17,985	$74,447	2018Q2	9.6%	$61,892	$19,715	$81,607
10	BREAKWATER & SEAWALLS	$1,080	$149	14%	$1,229	0.0%	$1,080	$149	$1,229	2018Q2	9.6%	$1,184	$163	$1,347
12	NAVIGATION PORTS & HARBORS	$5,390	$1,985	37%	$7,375	0.0%	$5,390	$1,985	$7,375	2018Q2	9.6%	$5,908	$2,176	$8,084
12	NAVIGATION PORTS & HARBORS	$343,854	$96,406	28%	$440,260	0.0%	$343,854	$96,406	$440,260	2018Q2	9.6%	$376,924	$105,678	$482,602
12	NAVIGATION PORTS & HARBORS	$2,822	$629	22%	$3,451	0.0%	$2,822	$629	$3,451	2018Q2	9.6%	$3,093	$690	$3,783
	CONSTRUCTION ESTIMATE TOTALS:	$410,608	$117,286	29%	**$527,894**		$410,608	$117,286	$527,894			$450,097	$128,566	$578,663
01	LANDS AND DAMAGES	$100	$25	25%	$125	0.0%	$100	$25	$125	2015Q3	4.4%	$104	$26	$130
30	PLANNING, ENGINEERING & DESIGN													
0.0%	Project Management	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Planning & Environmental Compliance	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
1.0%	Engineering & Design	$3,973	$1,243	31%	$5,216	0.0%	$3,973	$1,243	$5,216	2014Q3	4.8%	$4,164	$1,303	$5,467
0.0%	Engineering Tech Review ITR & VE	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Contracting & Reprographics	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Engineering During Construction	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Planning During Construction	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Project Operations	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
31	CONSTRUCTION MANAGEMENT													
1.0%	Construction Management	$3,973	$781	20%	$4,753	0.0%	$3,973	$781	$4,753	2018Q2	20.5%	$4,788	$941	$5,729
0.0%	Project Operation:	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Project Management	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
	CONTRACT COST TOTALS:	$418,653	$119,335		**$537,988**		$418,653	$119,335	$537,988			$459,153	$130,836	**$589,989**

****** TOTAL PROJECT COST SUMMARY ******

PROJECT: Jacksonville Harbor Deepening GRR2 [47' LPP]
LOCATION: Jacksonville, FL

DISTRICT: SAJ Jacksonville PREPARED: 3/8/2013
POC: CHIEF, COST ENGINEERING, Tracy Leeser

This Estimate reflects the scope and schedule in report; Jacksonville Harbor GRR2 Draft Report

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
						Program Year (Budget EC): 2015								
						Effective Price Level Date: 1 OCT 14								
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	**TOTAL ($K)**	Spent Thru: 1-Oct-12 ($K)		COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*
02	RELOCATIONS	$1,000	$132	13%	$1,132	0.0%	$1,000	$132	$1,132	$0		$1,096	$144	$1,241
06	FISH & WILDLIFE FACILITIES	$56,462	$23,621	42%	$80,082	0.0%	$56,462	$23,621	$80,082	$0		$61,892	$25,892	$87,784
10	BREAKWATER & SEAWALLS	$77,919	$17,847	23%	$95,766	0.0%	$77,919	$17,847	$95,766	$0		$85,413	$19,564	$104,977
12	NAVIGATION PORTS & HARBORS	$7,646	$2,816	37%	$10,461	0.0%	$7,646	$2,816	$10,461	$0		$8,381	$3,086	$11,467
12	NAVIGATION PORTS & HARBORS	$412,676	$115,702	28%	$528,377	0.0%	$412,676	$115,702	$528,377	$0		$452,364	$126,829	$579,193
12	NAVIGATION PORTS & HARBORS	$2,712	$605	22%	$3,317	0.0%	$2,712	$605	$3,317	$0		$2,973	$663	$3,636
	CONSTRUCTION ESTIMATE TOTALS:	$558,414	$160,722		$719,136	0.0%	$558,414	$160,722	$719,136	$0		$612,118	$176,179	$788,297
01	LANDS AND DAMAGES	$100	$25	25%	$125	0.0%	$100	$25	$125	$0		$104	$26	$130
30	PLANNING, ENGINEERING & DESIGN	$5,407	$1,692	31%	$7,099	0.0%	$5,407	$1,692	$7,099	$0		$5,667	$1,774	$7,441
31	CONSTRUCTION MANAGEMENT	$5,407	$1,062	20%	$6,469	0.0%	$5,407	$1,062	$6,469	$0		$6,516	$1,281	$7,797
	PROJECT COST TOTALS:	$569,327	$163,501	29%	$732,829		$569,327	$163,501	**$732,829**	$0		$624,406	$179,259	$803,665

Mandatory by Regulation	CHIEF, COST ENGINEERING, Tracy Leeser	ESTIMATED FEDERAL COST:	**50%**	**$401,833**
Mandatory by Regulation	PROJECT MANAGER, Jason Harrah	ESTIMATED NON-FEDERAL COST:	**50%**	**$401,833**
Mandatory by Regulation	CHIEF, REAL ESTATE, Audrey Ormerod	**ESTIMATED TOTAL PROJECT COST:**		**$803,665**
	CHIEF, PLANNING, Eric Bush			
	CHIEF, ENGINEERING, Laureen Borochaner			
	CHIEF, OPERATIONS, Jim Jeffords			
	CHIEF, CONSTRUCTION, Steve Duba			
	CHIEF, CONTRACTING, Carlos Clarke			
	CHIEF, PM-PB, Dan Haubner			
	CHIEF, DPM, Dave Hobbie			

****** TOTAL PROJECT COST SUMMARY ******

****** CONTRACT COST SUMMARY ******

PROJECT: Jacksonville Harbor Deepening GRR2 [47' LPP]
LOCATION: Jacksonville, FL
This Estimate reflects the scope and schedule in report; Jacksonville Harbor GRR2 Draft Report

DISTRICT: SAJ Jacksonville PREPARED: 3/8/2013
POC: CHIEF, COST ENGINEERING, Tracy Leeser

WBS Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 8-Mar-13 Effective Price Level: 1-Oct-12				Program Year (Budget EC): 2015 Effective Price Level Date: 1 OCT 14								
				RISK BASED										
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	TOTAL ($K)	Mid-Point Date	INFLATED (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*P*	*L*	*M*	*N*	*O*
	PHASE 1 or CONTRACT 1													
02	RELOCATIONS	$1,000	$132	13%	$1,132	0.0%	$1,000	$132	$1,132	2018Q2	9.6%	$1,096	$144	$1,241
06	FISH & WILDLIFE FACILITIES	$56,462	$23,621	42%	$80,082	0.0%	$56,462	$23,621	$80,082	2018Q2	9.6%	$61,892	$25,892	$87,784
10	BREAKWATER & SEAWALLS	$77,919	$17,847	23%	$95,766	0.0%	$77,919	$17,847	$95,766	2018Q2	9.6%	$85,413	$19,564	$104,977
12	NAVIGATION PORTS & HARBORS	$7,646	$2,816	37%	$10,461	0.0%	$7,646	$2,816	$10,461	2018Q2	9.6%	$8,381	$3,086	$11,467
12	NAVIGATION PORTS & HARBORS	$412,676	$115,702	28%	$528,377	0.0%	$412,676	$115,702	$528,377	2018Q2	9.6%	$452,364	$126,829	$579,193
12	NAVIGATION PORTS & HARBORS	$2,712	$605	22%	$3,317	0.0%	$2,712	$605	$3,317	2018Q2	9.6%	$2,973	$663	$3,636
	CONSTRUCTION ESTIMATE TOTALS:	$558,414	$160,722	29%	**$719,136**		$558,414	$160,722	$719,136			$612,118	$176,179	$788,297
01	LANDS AND DAMAGES	$100	$25	25%	$125	0.0%	$100	$25	$125	2015Q3	4.4%	$104	$26	$130
30	PLANNING, ENGINEERING & DESIGN													
0.0%	Project Management	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Planning & Environmental Compliance	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
1.0%	Engineering & Design	$5,407	$1,692	31%	$7,099	0.0%	$5,407	$1,692	$7,099	2014Q3	4.8%	$5,667	$1,774	$7,441
0.0%	Engineering Tech Review ITR & VE	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Contracting & Reprographics	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Engineering During Construction	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Planning During Construction	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Project Operations	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
31	CONSTRUCTION MANAGEMENT													
1.0%	Construction Management	$5,407	$1,062	20%	$6,469	0.0%	$5,407	$1,062	$6,469	2018Q2	20.5%	$6,516	$1,281	$7,797
0.0%	Project Operation:	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
0.0%	Project Management	$0	$0	29%	$0	0.0%	$0	$0	$0	0	0.0%	$0	$0	$0
	CONTRACT COST TOTALS:	$569,327	$163,501		**$732,829**		$569,327	$163,501	$732,829			$624,406	$179,259	**$803,665**

N7. COST MCX TPCS CERTIFICATION

The Recommended Plan estimate, with the appropriate Risk Analysis and Total Project Cost Summary, will undergo Cost Review and Certification by the Walla Walla Mandatory Center of Expertise prior to submittal of the Final Report.